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Flewitt

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Fig. 1.

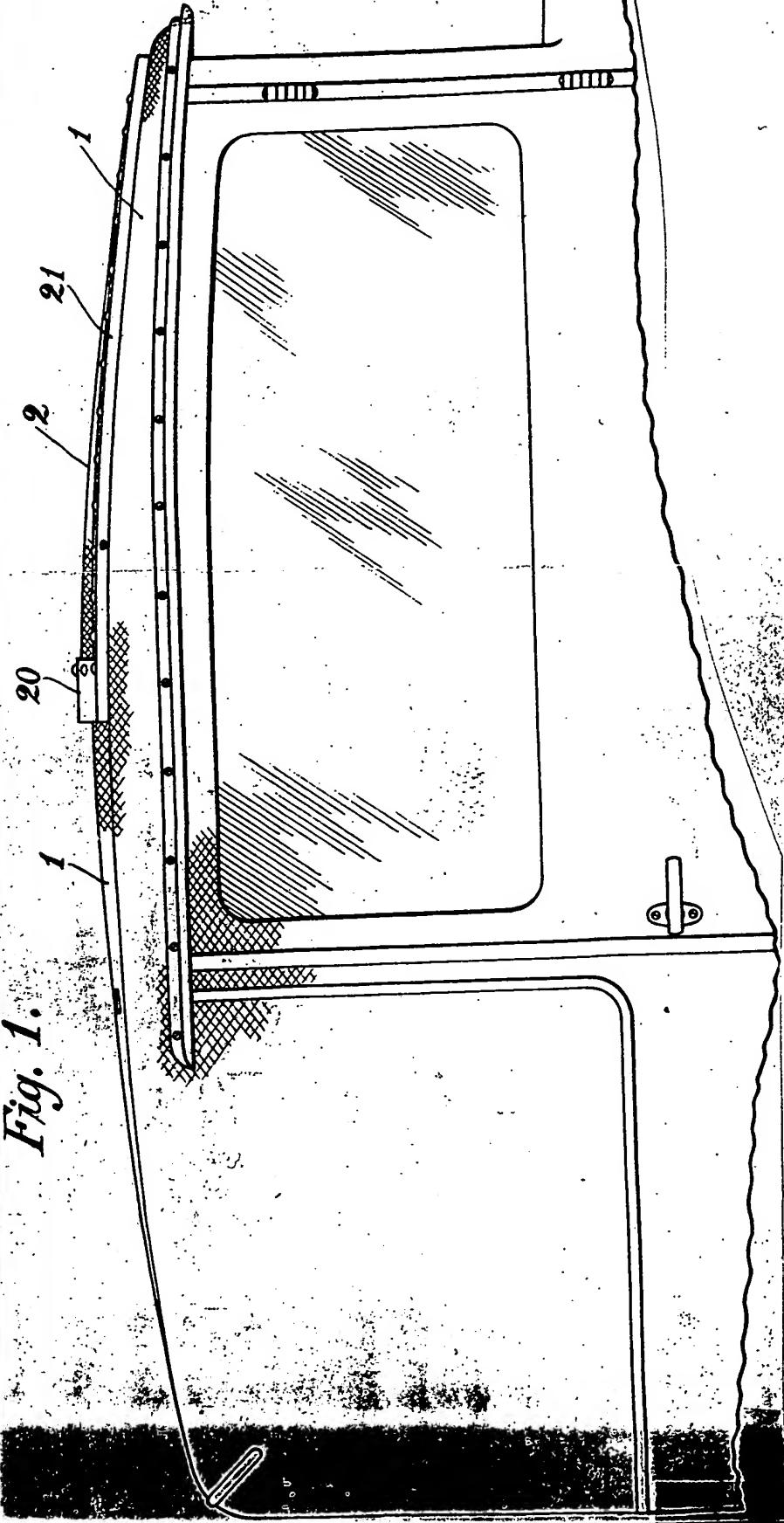


Fig. 4.

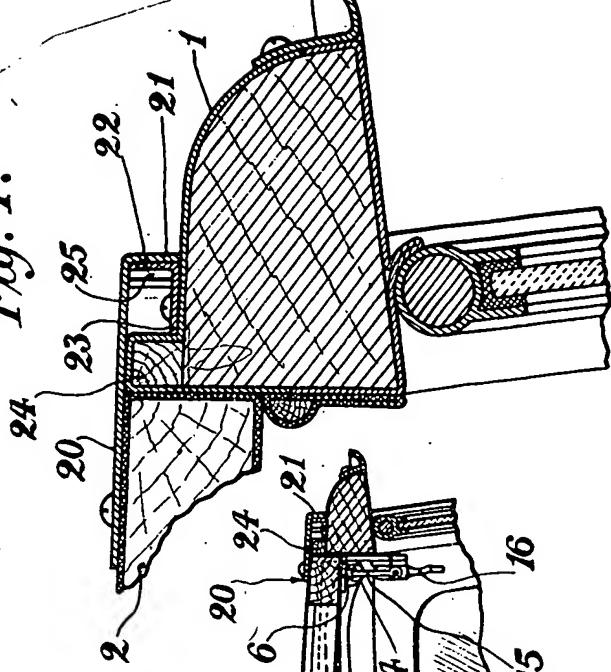


Fig. 2.

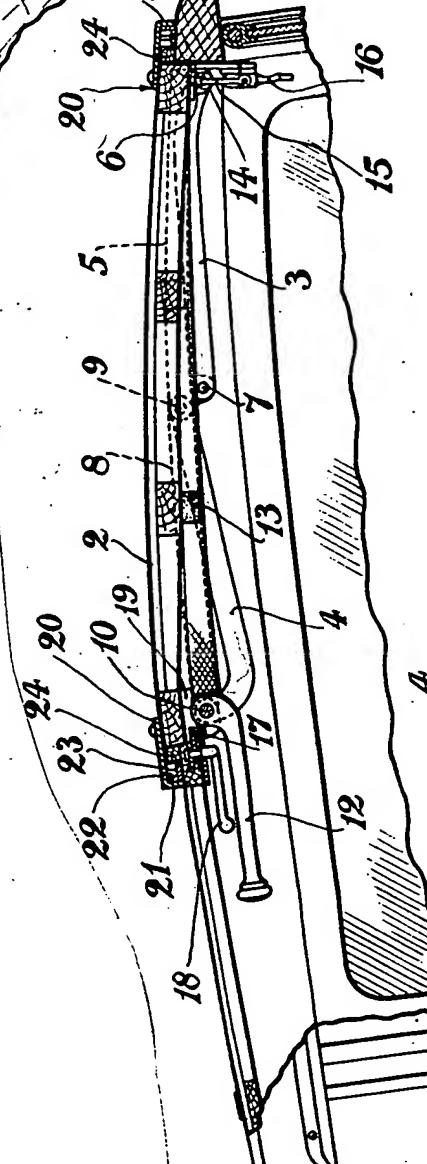
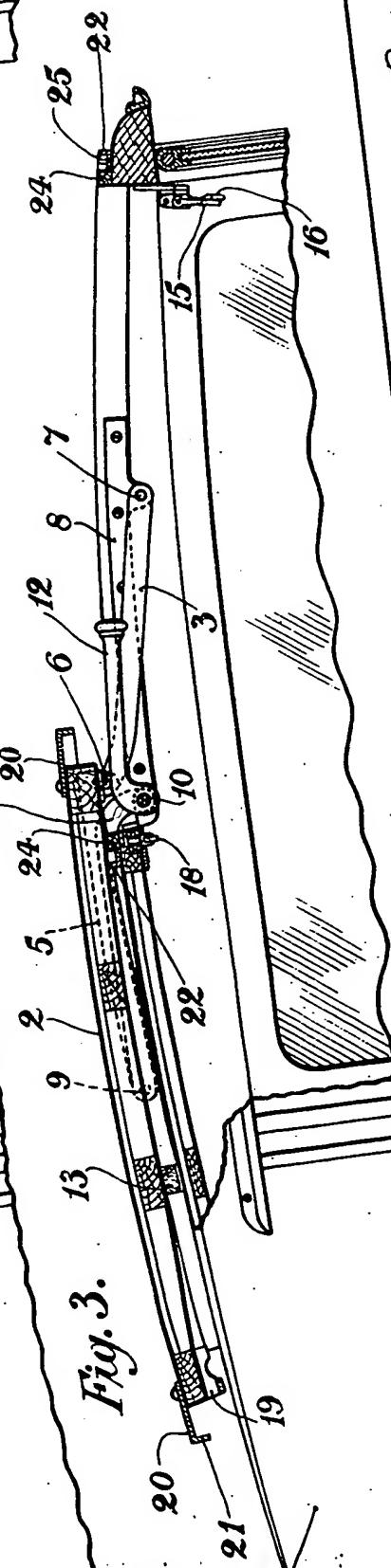


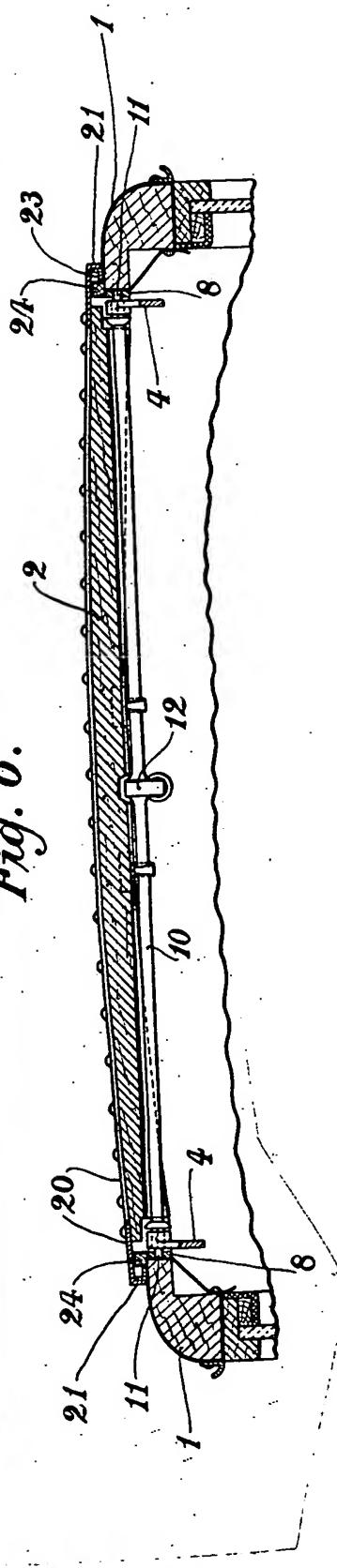
Fig. 3.



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Fig. 6.



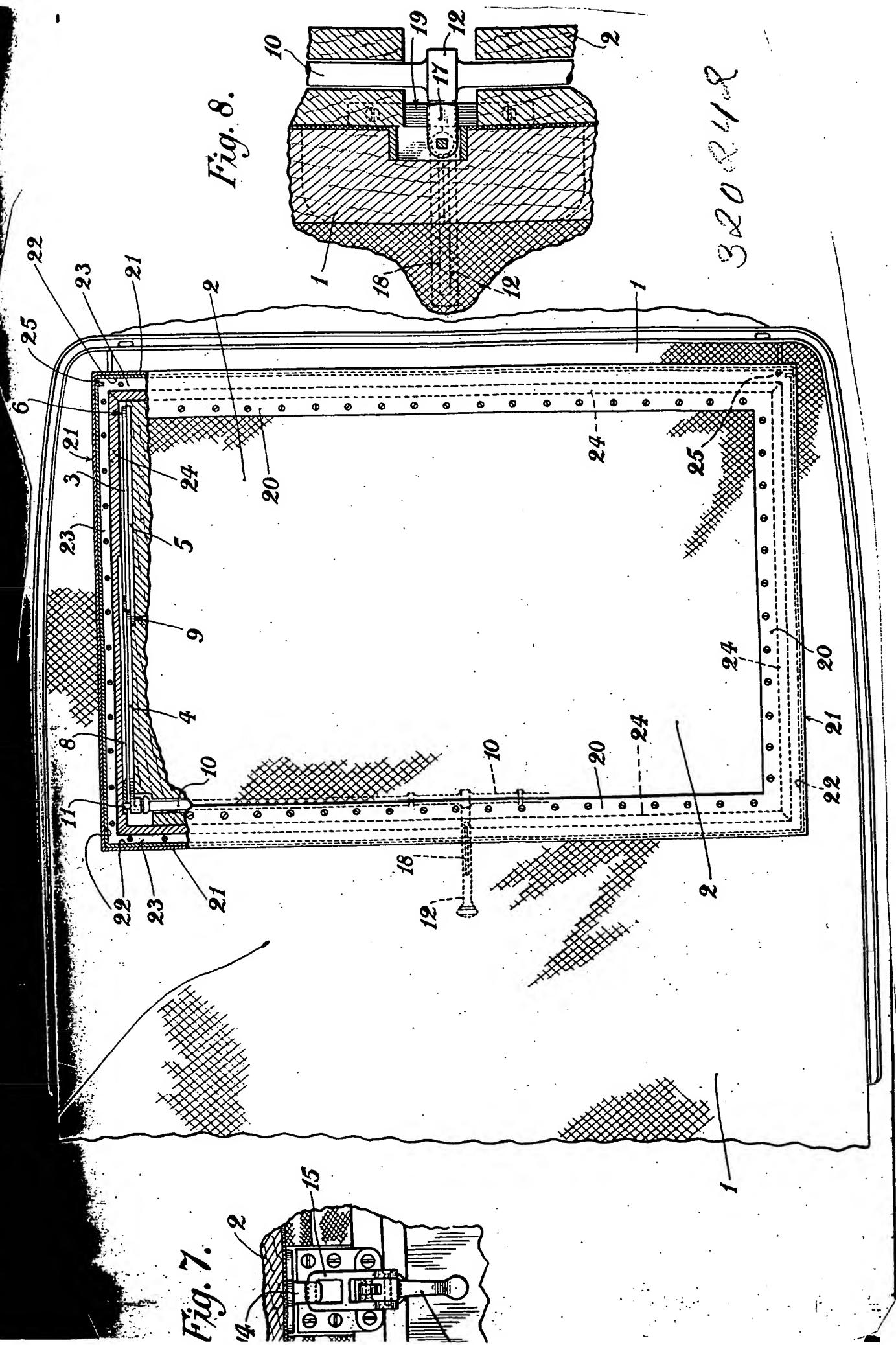
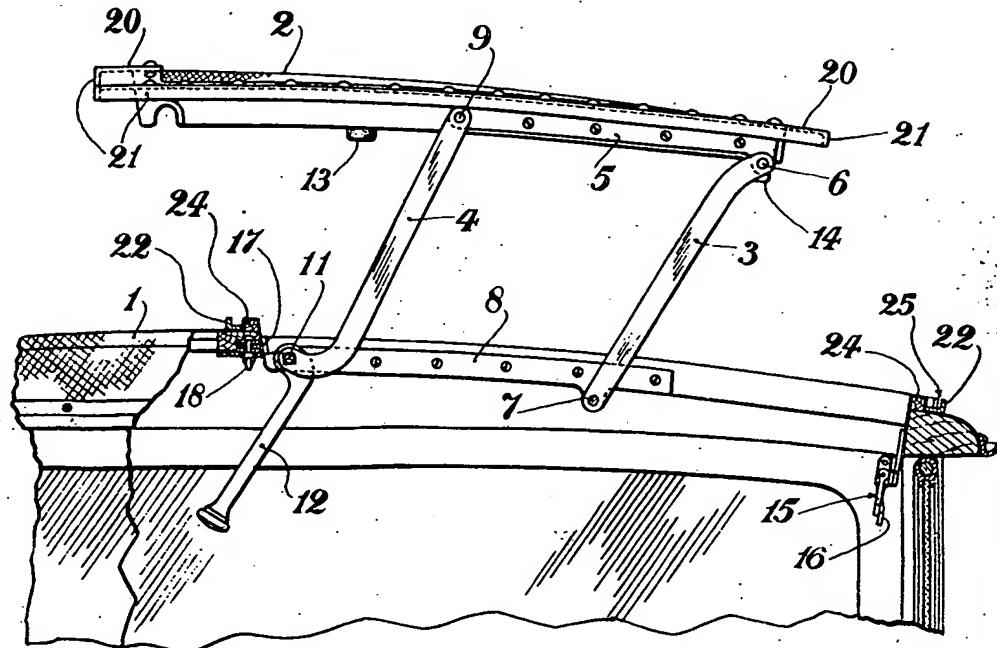


Fig. 7.

[This Drawing is a reproduction of the Original on a reduced scale.]

Fig. 9.



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# PATENT SPECIFICATION

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Application Date: Oct. 17, 1928. No. 29,933 / 28.

320,242

Complete Left: May 24, 1929.

Complete Accepted: Oct. 10, 1929.

## PROVISIONAL SPECIFICATION.

### Improvements relating to Vehicle Bodies.

I, JOHN ALEXANDER FLEWITT, British Subject, of 120, Alma Street, Aston, Birmingham, do hereby declare the nature of this invention to be as follows:—

This invention relates to motor and other vehicle bodies, which are primarily of the saloon or similar closed type but which have provision whereby a substantial portion of the top or roof may be opened to admit air and light in fine weather.

The object of the present invention is to provide improved and simplified means whereby the top of the body may be readily opened from the interior of the vehicle, and whereby a perfectly weather-proof joint is obtained when the movable portion of the top is closed.

According to the invention, the top or roof of the body comprises a movable panel normally covering the forward portion of the body over the front seats, and connected to the fixed side frames of the body by means of pairs of links, similar to parallel-motion links, disposed at opposite sides, whereby the said movable panel may be raised and swung rearwards so as to lie over the rear portion of the roof. Conveniently the movable panel may be operated from the interior of the vehicle by means of an arm carried by a transverse rotatable rod extending across the vehicle and upon each end of which is fixed one of the controlling links. To attain a weather-proof joint when the movable panel is closed, the said panel carries on all sides an overhanging and depending flange which enters a groove or channel in the fixed portion of the roof, the groove or channel being conveniently formed between a wooden or other fillet, or bar, and a spaced metal strip. Airage outlets are provided at the corners or other parts of the groove or channel, and in the case of a fabric-covered body the wooden fillet or bar is upon the main fabric covering, and the extended edge of the latter is wrapped over the fillet in a direction towards the side edge of the roof, while a further strip of fabric may be fastened under the fillet and passed over the latter and the

above-mentioned covering in the opposite direction, so as to cover the inside periphery of the opening in the roof.

In carrying out the preferred form of the invention in connection with a saloon motor-vehicle, the rear portion of the roof is fixed, but a large rectangular opening is provided at the front of the roof, over the front seat. This opening extends transversely between the fixed sides of the body and longitudinally between the windscreen or front hood extension and the fixed rear portion of the hood. Normally, when a closed body is required, this opening is adapted to be closed by a removable panel which closely fits the said opening. To admit of readily opening and closing this panel its forward portion is connected to the fixed side frames by two pairs of parallel-motion links disposed respectively at opposite sides of the vehicle. Thus, when the panel is closed, one link at each side extends rearwards and slightly downwards from the front portion of the panel (to the side of which it is pivoted) to a horizontal metal plate or bar secured to the inside face of the side frame within the opening which receives the panel, the rear end of the link being pivoted to the metal plate at the lower edge thereof, while the second link is pivoted at its forward end to the side of the panel at about the middle of the said side and extends rearwards to the rear end of the metal plate adjacent to the rear edge of the roof opening. The rear links at opposite sides of the panel are operatively coupled together by a transverse rod or shaft passing across the body in front of the fixed roof portion and to the opposite ends of which the inner ends of the said rear links are fixed. These ends of the rod extend slightly beyond the links in the form of trunnions which turn in bearings in the side plates and thus constitute the pivots for the rear links. Fixed to the middle of the rotatable bar is a rearwardly extending lever arm which, when the roof panel is closed, lies beneath the fixed rear portion of the roof. To open the panel so as to admit air and light into the vehicle, the lever arm of the rotatable rod is

[Price 1/-]

drawn downwards and forwards until it extends in a direction towards the wind-screen. This operation rotates the rod and moves the rear links angularly first 5 upwardly and then rearwardly over the dead centre, the front link following the same movement so that the roof panel is raised, swung rearwardly and lowered over the fixed rear portion of the roof 10 with a substantially parallel motion; leaving the roof aperture clear and unobstructed. The rear links may be suitably cranked or shaped at their inner ends to enable them to clear the front edge 15 of the fixed part of the roof and permit of the movable panel lying upon or close to the said fixed part. Suitable stops may also be provided. The panel may be securely fastened in its closed position by 20 catches or fastenings at front and back. Thus, at the front it may carry a hook-like catch member adapted to be engaged by a loop member of a lever fastener attached to the middle of the windscreens 25 frame, so that the panel is thereby drawn tightly down into place. The fastener at the back may conveniently consist of a horizontally-moving pivoted bolt mounted near the edge of the fixed roof 30 portion and having a lever arm within the interior of the body adapted to be operated so as to cause the bolt to engage a recess in the rear edge of the panel. The panel may, if desired, be locked in 35 its opened position such as, for example, by the hook-like catch member at the front engaging with a spring catch member on the operating lever arm of the transverse bar. A transverse groove may be formed 40 across the underside of the panel to engage or clear the said bar.

In order to obtain a weather-proof joint between the closed panel and the fixed portion of the roof, the said panel has 45 attached to its top face an overhanging sheet-metal frame having a turned down flange at its outer edge. This flange is adapted to engage and seat itself within

a groove or channel provided in the top 50 face of the fixed portion of the roof that surrounds the opening therein; that is to say, in the front extension from the wind-screen, in the lateral extension from the body sides, and in the forward part of the rear fixed roof portion. This groove or channel, which is situated adjacent the 55 sides of the roof opening, may conveniently be formed between a square-sectioned wooden fillet, rib or bar fixed to the roof flush with the edge of the opening, and a spaced metal strip or beading having a raised inner edge opposed to but separated from the wooden fillet and a flat base flange adapted to be fastened to the roof. The metal strips for the four sides of the channel have mitred joints at the corners, and the opposed ends forming these joints may be gapped or cut away at the lower part to form outlets through 60 which rain may drain away.

In the case of a fabric-covered body, the main covering of the fixed part of the roof is preferably extended inwards beyond the edge of the roof opening, in 65 the form of a flap, and another fabric strip or flap is fastened all round the opening so as to extend towards the outside edge of the roof. The wooden fillets are nailed to the roof over the double thickness of fabric, flush with the edge of the opening. The flap extension of the bottom or main fabric is then folded over the fillet in a direction towards the outside edge of the roof, and the supplementary or top flap is folded over the covered fillet in the opposite direction, that is, towards the roof opening, and is taken over the edge of said opening so as 70 to form a trimming for the same. By this means it is impossible for rain to pass from the groove or channel under the wooden fillet.

Dated this 16th day of October, 1928.  
 H. N. & W. S. SKERRITT,  
 24, Temple Row, Birmingham,  
 Agents for Applicant.

#### COMPLETE SPECIFICATION.

#### Improvements relating to Vehicle Bodies.

I, JOHN ALEXANDER FLEWITT, British  
 95 Subject, of 120, Alma Street, Aston,  
 Birmingham, do hereby declare "the  
 nature of this invention and in what  
 manner the same is to be performed, to  
 be particularly described and ascertained  
 100 in and by the following statement:—

This invention relates to motor or  
 other vehicle bodies, which are primarily  
 of the saloon or enclosed type, but in

which an opening is provided in the top  
 or roof, which is adapted to be closed by  
 a movable panel, the latter being con- 105  
 nected at each side, or at each end, to  
 the fixed portion of the top or roof by a  
 pair of links, so that the said movable  
 panel may be swing clear or away from  
 the opening when desired, such as in fine 110  
 weather, to admit light and air, or moved  
 over the opening to close the latter.

It is the object of the present invention to provide improved means for enabling the panel, in arrangements of the above type, to be easily operated from the interior of the vehicle and readily moved away from or over the opening or aperture in the roof, when required.

The invention consists in connecting together corresponding links at each side or each end of the movable panel by a transverse member or bar fixed to the links and extending transversely across the roof aperture or across the interior of the vehicle, means being provided for rotating the said transverse member or bar or for turning it about its axis, so as to operate the links fixed thereto and cause the panel to be moved away from or over the roof opening. For the purpose of readily turning or rotating the bar from the interior of the vehicle the said bar is preferably provided with a lateral arm normally lying beneath and along-side the vehicle roof, but adapted when moved down to rotate the bar, so as to raise the links and thus raise the panel away from the opening.

Figure 1 of the accompanying drawings is a side view of a vehicle body having a roof aperture covered by a movable panel which is adapted to be operated in accordance with the present invention.

Figure 2 is a longitudinal section through the roof and movable panel, showing the latter in its closed position.

Figure 3 is a similar sectional view but with the panel moved into its open position.

Figure 4 represents a cross-section through the front portion of the roof upon a larger scale, showing more clearly the manner in which the flange on the forward edge of the panel engages over the fixed flange on the body.

Figure 5 is a plan of the roof, with the panel shown partly in section, closed, whilst Figure 6 is a cross-section through the panel and through the fixed portion of the vehicle roof.

Figure 7 is a view of the catch for securing the front of the movable panel, whilst Figure 8 shows the fastener for the rear edge of the latter.

Figure 9 represents a sectional view, with the panel partly opened, illustrating more clearly the arrangement of the links.

Referring to the drawings, the rear portion of the roof 1 of the vehicle is fixed, but a large rectangular opening is provided at the front of the roof, over the front seat, and this opening is adapted to be closed by a movable panel 2 which closely fits into the said opening. To

admit of readily opening and closing this panel 2 its forward portion is connected to the opposite edges of the opening by two pairs of parallel-motion links 3 and 4. Thus, two links are arranged at each side of the panel 2, to which they are pivotally connected at longitudinally separated points through the medium of a metal attachment plate 5 rigidly fixed to the side edge of the panel. The latter consists of a light fabric-covered frame, and when the said panel is in its closed position, as illustrated in Figure 2, the link 3 extends rearwards and slightly downwards from the front edge of the panel (to which it is pivoted at 6) and is pivotally connected at its rear end, at 7, to a plate 8 fixed to the opposed edge of the opening in the roof of the vehicle. The other link 4, on the other hand, is arranged rearwardly of the link 3 and is attached at its forward end at 9 to the plate on the movable panel at about the middle of the side of the latter, whilst its rear end, which may be upturned or cranked, is pivoted to the rear end of the plate 8 fixed to the edge of the opening. The two links are similarly arranged at opposite sides of the panel, in such a manner that they impart, when operated a substantially parallel motion to the panel and enable the latter to be raised and swung rearwardly clear of the opening in the manner shown in Figure 3 of the drawings. In order to operate the panel from the interior of the vehicle, the rear links 4 at opposite sides are operatively coupled together by a transverse rod or shaft 10 passing across the body in front of the fixed roof portion and to the opposite ends of which the inner ends of the said rear links are fixed. These ends of the rod 10 extend slightly beyond the links 4 in the form of trunnions 11 which turn in bearings in the side plates 8 (see Figure 5) and thus constitute the pivots for the rear links. Fixed to the middle of the rotatable bar 10 is a rearwardly extending lever arm 12 which, when the roof panel is closed, lies beneath the fixed rear portion 1 of the roof. To open the panel so as to admit air and light into the vehicle, the lever arm 12 of the rotatable rod is drawn downward and forwards until it extends in a direction towards the windscreen. This operation rotates the rod and moves the rear links 4 angularly first upwardly and then rearwardly over the dead centre, the front link following the same movement so that the roof panel is raised, swung rearwardly and lowered over the fixed rear portion of the roof with a substantially parallel motion, leaving the roof aperture clear and unobstructed. The rear links 4 are

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cranked or upturned at their inner ends, as stated, to enable them to clear the front edge of the fixed part of the roof and permit of the movable panel 2 lying upon or close to the said fixed part. Rubber buffers 13 are provided upon the underside of the movable panel, these buffers resting upon the fixed part of the roof, when the panel is opened, and preventing damage to the fabric. The panel 2 may be securely fastened in its closed position by catches or fastenings at front and back. Thus, at the front it may carry a hook-like catch member 14 (see Figure 7) adapted to be engaged by a loop 15 of a lever fastener 16 attached to the middle of the windscreen frame, so that the panel is thereby drawn tightly down into place. The fastener at the back may conveniently consist of a horizontally-moving pivoted bolt 17 mounted near the edge of the fixed roof portion and having a lever arm 18 within the interior of the body adapted to be operated so as to cause the bolt to engage a recess 19 in the rear edge of the panel (see Figure 8). The panel may, if desired, be locked in its opened position such as, for example, by the hook-like catch member at the front engaging with a spring catch member (not illustrated) on the operating lever arm of the transverse bar. Or means may be provided for holding the panel in a partly opened position.

In order to obtain a weather-proof joint between the panel 2, when closed, and the fixed portion 1 of the roof, the said panel 2 has attached to its top face an overhanging sheet-metal frame 20 having a turned down flange 21 at its outer edge. This flange 21 is adapted to engage over and fit closely against a vertical flange 22 surrounding the opening in the fixed part of the roof, the said flange being formed integral with a metal attachment frame 23, the inner edge of which abuts against a wooden square-sectioned fillet 24 likewise surrounding the opening in the roof. The upstanding flange 22 forms with the fillet a groove or channel, and in order to enable any water which may have collected in the groove when the panel is opened the front corners of the flange 22 may be formed with outlet apertures 25. When the links are operated to close the panel the latter is swung

forwardly and is then lowered substantially vertically, thus permitting the flange 21 of the panel to move or drop down over the flange 22, thereby positively preventing any rain or moisture from entering the interior of the vehicle. When, on the other hand, the panel is opened it is first raised before being swung rearwardly, thus moving the flange 21 clear of the flange 22 on the fixed part of the roof.

Any other arrangement may be provided for ensuring a weather-proof joint between the movable panel and the fixed part of the roof.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:

1. A vehicle having a top or roof formed with an opening fitted or provided with a movable panel which is connected at each side, or at each end, to the fixed portion of the top or roof by a pair of links, corresponding links at each side or end being connected by, and fixed to, a transverse member or bar extending across the roof aperture or across the interior of the vehicle, means being provided for rotating the said transverse member or bar or for turning it about its axis, the said member or bar then operating the links and causing the panel to be moved away from or over the roof opening.
2. A vehicle having a roof aperture fitted or provided with a movable panel, as claimed in claim 1, in which the transverse member or bar to which corresponding links are connected is fitted with a lateral part or arm disposed inside the vehicle by means of which the said member or bar may be turned or rotated to operate the links substantially as described.
3. A vehicle body provided with a roof aperture closed by a movable panel arranged and operated substantially as herein described and as set forth by the accompanying drawings.

Dated this 23rd day of May, 1929.

H. N. & W. S. SKERRETT,  
24, Temple Row, Birmingham,  
Agents for Applicant.

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